Ref. 2

対応なし

# ELECTRONIC MAIL SYSTEM

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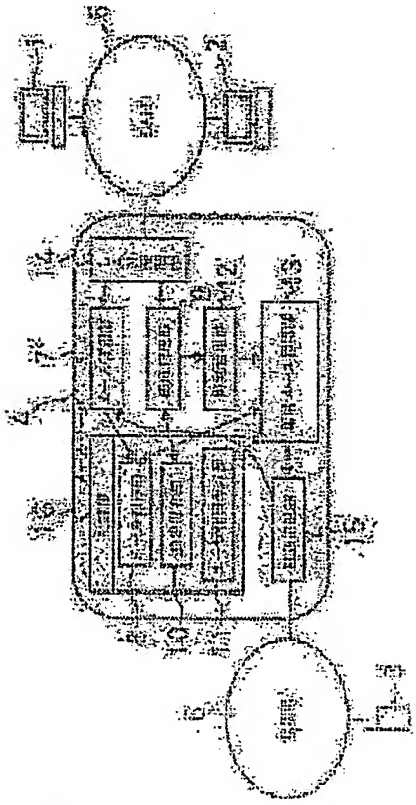
Abstract of **JP 2000165433 (A)**

PROBLEM TO BE SOLVED: To manage electronic mails while classifying them into newly arrived mails and mails whose arrival has already been reported with a small storage capacity by reporting the arrival of electronic mails to each user depending on its mail reception quantity and on a received time segment or the like. SOLUTION: A mail management section 7 manages an electronic mail from a communication unit 1 and a mail storage section 8 stores it. A setting management section 9 manages a mail confirming period from a communication unit 2 and a setting storage section 10 stores it, and the setting management section 9 generates a mail confirmation period table.; A mail confirmation section 13 generates a mail list according to a mail confirmation request instruction outputted from a time management section 12 at a confirmation time on the period list, calls a telephone number of a communication unit 3 stored in a user information storage section 11 when the list indicates a newly arrived mail, transmits the mail list to the communication unit 3 so as to inform the unit 3 of the presence of the newly-arrived mail. The mail confirmation period can be set to each user and each time zone. An identifier denoting that the notice of the arrival of mail has already been made is added to a header of mails whose arrival has already been reported.



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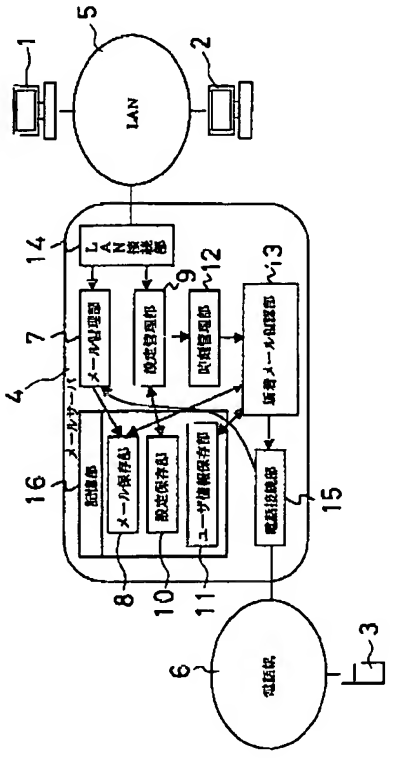
(54)【発明の名称】　電子メールシステム

(57)【要約】
【課題】　各ユーザのメール受信量や受信時間帯などに応じて着信通知し、少ない記憶容量でメールを新着と着信通知済みとに区分して管理する。
【解決手段】　通信装置１からの電子メールはメール管理部７で管理されメール保存部８に保存される。通信装置２からのメール確認周期は設定管理部９で管理され設定保存部１０に保存され、設定管理部９はメール確認周期表を作成する。該周期表の確認時刻に時刻管理部１２から出力されるメール確認要求命令に従ってメール確認部１３はメールリストを作成し、該リスト中に新着メールがあると、ユーザ情報保存部１１に記憶された通信装置３の電話番号を発呼しメールリストを送信して新着メールの着信を通知する。前記メール確認周期はユーザ毎に、また時間帯毎に設定可能である。着信通知を行ったメールのヘッダには着信通知済みであることを表す識別子が付加される。



【特許請求の範囲】
【請求項１】　電子メールの送受信が可能な複数の通信装置と各通信装置と通信網によって接続されるメールサーバとを備え、メールサーバを介して通信装置間で電子メールを送受信する電子メールシステムにおいて、
前記メールサーバは、
受信したメールを管理し保存するメール管理保存部と、入力されたメール確認周期を管理し保存し、該メール確認周期からメール確認周期表を作成するメール確認周期管理保存部と、
ユーザの通信装置のアドレスを保存するユーザ情報保存部とを備え、
前記メール確認周期表に基づく時刻となったときに出力されるメール確認要求命令に従ってメールリストを作成し、該メールリスト中に着信通知をまだ行っていない新着メールがある場合、前記ユーザ情報保存部からユーザの通信装置のアドレスを取得して発信し、作成したメールリストを送信して新着メールの着信通知を行うことを特徴とする電子メールシステム。
【請求項２】　前記メールサーバのメール確認周期管理保存部は、入力されたメール確認周期をユーザ毎に管理し保存し、
前記メールサーバのユーザ情報保存部は、ユーザ毎に通信装置のアドレスを保存し、
前記メールサーバは、前記メール確認周期表に基づく所定ユーザに対応する時刻となったときに出力されるメール確認要求命令に従って所定ユーザに関するメールリストを作成し、該メールリスト中に着信通知をまだ行っていない新着メールがある場合、前記ユーザ情報保存部から所定ユーザの通信装置のアドレスを取得して発信し、作成したメールリストを送信して新着メールの着信通知を行うことを特徴とする請求項１記載の電子メールシステム。
【請求項３】　前記メールサーバのメール確認周期管理保存部は、メール確認周期を時間帯毎に管理し保存することを特徴とする請求項１または２記載の電子メールシステム。
【請求項４】　前記メールサーバのメール管理保存部に保存されるメールには着信通知状況を表す識別子が付加され、該識別子によって作成したメールリスト中に着信通知をまだ行っていない新着メールがあるか否かが判断され、かつ新着メールの着信通知を行った後、メール管理保存部に保存されるメールに対して着信通知済みであることを表す識別子が付加されることを特徴とする請求項１～３のうちのいずれか１つに記載の電子メールシステム。
【発明の詳細な説明】
【０００１】
【発明の属する技術分野】本発明は、電子メールシステムに関し、特にメールサーバの新着メールの着信を通知するシステムに関する。
【０００２】
【従来の技術】電子メールシステムは、電子メールの送受信が可能な複数の通信装置と、各通信装置と通信網によって接続されるメールサーバとを備え、電子メールはメールサーバを介して通信装置間で送受信される。このような電子メールシステムでは、一般に、通信装置から発信された電子メールはメールサーバに一旦保存され、相手通信装置には直接届かない。したがって、通信装置はメールサーバに対して電子メールの着信有無の確認動作を行うが、この確認動作のための通信装置のユーザの煩わしい操作や手間を低減する着信通知システムが、たとえば特開昭６３－２９２８４７号公報、特開平５－４８６４５号公報および特開平１０－１０７８３５号公報に開示されている。特開昭６３－２９２８４７号公報および特開平５－４８６４５号公報では、電子メールを受信したメールサーバは通信装置に対して直ちに着信を通知している。また特開平１０－１０７８３５号公報では、たとえば１０分の一定時間の間隔で受信メモリからメールを取出して着信を通知している。
【０００３】一方、メールサーバに保存される電子メールには着信通知をまだ行っていない新着メールと着信通知を既に行ったメールとがあり、着信通知時には保存メール数、発信元情報および本文の内容などが通知情報として必要であり、メールサーバでは電子メールを管理する必要がある。
【０００４】前記特開平５－４８６４５号公報のメールサーバは、各ユーザの通信端末毎のメール数を格納するリストを備える。メールサーバのメール数に変化があったとき、すなわち通信装置からメールを受信したときや通信装置がメールを取込んだときには、前記リストのメール数が更新され、このようにして各ユーザ毎のメール数を把握している。しかし、該メールサーバではメール数しか管理されておらず、保存されているメールが新着メールであるか着信通知を既に行ったメールであるかを区別して管理していない。
【０００５】前記特開平１０－１０７８３５号公報のメールサーバでは、一定時間間隔で受信メモリからメールを取出し、発信元のアドレス、発信日時、サブジェクト（タイトル）および本文などのデータを抜出し、各データが予め定められた条件に適合するか否かを判断し、その判断結果に応じた方法で着信を通知している。たとえば、前記条件に適合する場合には、発信元のアドレスとサブジェクトのみによって、またはメール全文によって着信を通知している。なお、前記条件に適合しない場合には着信は通知されない。受信メモリから取出されたメールは他の記憶領域に保存されるので、受信メモリには新着メールだけが保存される。
【０００６】
【発明が解決しようとする課題】前記特開昭６３－２９

２８４７号公報および特開平５－４８６４５号公報の着信通知システムでは、電子メールが受信されるたびに着信が通知されるので、頻繁にメールが届くユーザの通信装置では着信通知回数が多くなり、通信回線の使用料金が大きくなる。また前記特開平１０－１０７８３５号公報の着信通信システムでは、いずれのユーザの通信装置に対しても同じ一定の時間間隔で着信が通知され、各ユーザのメール受信量の違いや時間帯によるメール受信量の違いは考慮されていない。したがって、メール受信量の少ないユーザの通信装置では必要以上のメール確認動作を行い、そのような通信装置に対するメールサーバでは必要以上の処理を行うこととなる。また、メール受信量の多いユーザの通信装置では着信通知回数が不足し、着信通知が遅れてしまう。

【０００７】一方、メールサーバに保存される電子メールの管理に関して、前記特開平５－４８６４５号公報では、メールサーバのメール数に変化があったときにリストのメール数が更新され、このために手間を要する。また、メール数しか管理されていないので、保存されているメールが新着メールであるか着信通知済みのメールであるかを区別できない。また前記特開平１０－１０７８３５号公報では、保存されているメールが新着メールであるか着信通知済みのメールであるかを区別することができるが、そのために受信メモリ以外の他の記憶領域が必要である。

【０００８】携帯するために高い利便性および小型化が要求される電話機で通信装置を実現した電子メールシステムでは、上述の不都合は特に顕著である。

【０００９】本発明の目的は、各ユーザのメール受信量や受信時間帯などに応じた着信通知ができる電子メールシステムを提供すること、さらに少ない記憶容量で受信メールを新着と着信通知済みとに区分して管理し保存できる優れた利便性の電子メールシステムを提供することである。

【００１０】

【課題を解決するための手段】本発明は、電子メールの送受信が可能な複数の通信装置と各通信装置と通信網によって接続されるメールサーバとを備え、メールサーバを介して通信装置間で電子メールを送受信する電子メールシステムにおいて、前記メールサーバは、受信したメールを管理し保存するメール管理保存部と、入力されたメール確認周期を管理し保存し、該メール確認周期からメール確認周期表を作成するメール確認周期管理保存部と、ユーザの通信装置のアドレスを保存するユーザ情報保存部とを備え、前記メール確認周期表に基づく時刻となったときに出力されるメール確認要求命令に従ってメールリストを作成し、該メールリスト中に着信通知をまだ行っていない新着メールがある場合、前記ユーザ情報保存部からユーザの通信装置のアドレスを取得して発信し、作成したメールリストを送信して新着メールの着信通知を行うことを特徴とする電子メールシステムである。

【００１１】本発明に従えば、通信装置から電子メールが発信されると、当該電子メールはメールサーバによって受信されてそのメール管理保存部に一旦保存される。メールサーバには通信装置からメール確認周期が予め入力されており、この周期からメール確認周期表が作成されている。メール確認周期は適宜設定登録および変更可能に構成される。

【００１２】メール確認周期表に基づく時刻となったときに出力されるメール確認要求命令に従ってメールリストが作成される。該メールリスト中に着信通知をまだ行っていない新着メールがあるか否かが判断され、ある場合には、ユーザ情報保存部に保存されたユーザの通信装置のアドレスが取得されて発信される。そして、作成されたメールリストが送信され、このようにして新着メールの着信通知が行われる。前記ユーザ情報保存部に保存されたユーザの通信装置、たとえば携帯電話機で電子メールの取込み動作が実行されると、メールサーバは一旦保存した電子メールを携帯電話機に向けて送信する。このようにして一方通信装置からの電子メールが他方通信装置へ与えられる。

【００１３】メールサーバのメール確認周期管理保存部で管理され保存されるメール確認周期は通信装置から予め入力されるので、メール受信量や受信時間帯などを考慮して設定することができる。したがって、最適な条件で効率良く着信を通知することができる。メールサーバから通信装置に着信が通知されるので、携帯電話機などの通信装置のユーザはメールサーバに着信メールの有無を確認する手間を省くことができる。また、メールサーバはメールを受信する毎に通知するのではなく、ユーザによって設定された周期で通知するので、頻繁にメールを受信するユーザの通信装置では回線使用料金を抑制することができる。

【００１４】本発明は、前記メールサーバのメール確認周期管理保存部は、入力されたメール確認周期をユーザ毎に管理し保存し、前記メールサーバのユーザ情報保存部は、ユーザ毎に通信装置のアドレスを保存し、前記メールサーバは、前記メール確認周期表に基づく所定ユーザに対応する時刻となったときに出力されるメール確認要求命令に従って所定ユーザに関するメールリストを作成し、該メールリスト中に着信通知をまだ行っていない新着メールがある場合、前記ユーザ情報保存部から所定ユーザの通信装置のアドレスを取得して発信し、作成したメールリストを送信して新着メールの着信通知を行うことを特徴とする。

【００１５】本発明に従えば、メールサーバのメール確認周期管理保存部で管理され保存されるメール確認周期はユーザ毎に設定される。したがって、各ユーザのメール受信量や受信時間帯などを考慮した最適な条件で効率

良く着信を通知することができる。

【0016】本発明は、前記メールサーバのメール確認周期管理保存部は、メール確認周期を時間帯毎に管理し保存することを特徴とする。

【0017】本発明に従えば、メールサーバのメール確認周期管理保存部で管理され保存されるメール確認周期は時間帯毎に設定される。したがって、時間帯毎の最適な条件で効率良く着信を通知することができる。

【0018】本発明は、前記メールサーバのメール管理保存部に保存されるメールには着信通知状況を表す識別子が付加され、該識別子によって作成したメールリスト中に着信通知をまだ行っていない新着メールがあるか否かが判断され、かつ新着メールの着信通知を行った後、メール管理保存部に保存されるメールに対して着信通知済みであることを表す識別子が付加されることを特徴とする。

【0019】本発明に従えば、着信通知を行ったメールのヘッダには着信通知済みであることを表す識別子が付加される。この識別子によって、保存されているメールが新着メールであるか着信通知を行ったメールであるかを容易に識別することができる。識別子を付加するだけでメールの識別が可能なので、着信通知済みのメールを保存するための大容量な記憶領域は不要である。なお、メールが通信装置に与えられて削除されると前記識別子も削除するよう構成することで、メール状態変化に容易に対応することができる。

【0020】

【発明の実施の形態】図1は、本発明の実施の一形態である電子メールシステムを示す図である。電子メールシステムは、電子メールの送受信が可能な複数（本形態では3）の通信装置1～3と、各通信装置1～3と通信網によって接続されるメールサーバ4とを備え、メールサーバ4を介して通信装置1～3の間で電子メールが送受信される。

【0021】本発明は、特にメールサーバ4における電子メールの着信を通知するシステムに関し、通信装置1～3は既存の技術によって構成された通信装置を用いて実現される。本形態では、通信装置1，2をパーソナルコンピュータなどの通信装置で実現し、通信装置3を携帯可能な電話機などの通信装置で実現した例について説明する。

【0022】通信装置1，2はメールサーバ4とLAN（ローカルエリアネットワーク）5などの専用回線を介して通信が行われるが、LAN5の他に電話回線やISDN回線などの公衆回線を介して通信するようにしても構わない。通信装置3はメールサーバ4と電話網6を介して通信する。

【0023】インターネットなどのネットワークに接続されるメールサーバ4は、メール管理部7、設定管理部9、時刻管理部12、新着メール確認部13、LAN接続部14、電話接続部15および記憶部16を備える。記憶部16は、メール保存部8、設定保存部10およびユーザ情報保存部11を備える。

【0024】メールサーバ4で受信した通信装置1，2からの電子メールはLAN接続部14を介して、また通信装置3からの電子メールは電話接続部15を介してそれぞれメール管理部7に与えられて管理され、さらにメール保存部8に保存される。メール保存部8は、たとえば各ユーザのメールボックスの集合で構成される。

【0025】メール管理部7は、メール保存部8に保存されるメールに対して着信通知状況を表す識別子を付加する。この識別子によって、新着メール確認部13は、後述するようにして作成されたメールリスト中に着信通知をまだ行っていない新着メールがあるか否かを容易に判断することができる。なお、メール管理部7は、新着メールの着信通知を行った後に、メール保存部8に保存されるメールに対して着信通知済みであることを表す識別子を付加する。前記識別子としては、予め1つに定められた文字列であって、メール本文中に含まれる可能性の低い文字列、たとえば「X-tsuuchi:yes」を付加することが好ましい。

【0026】メールサーバ4に入力されたメール確認周期であって、メールクライアントとしての端末である通信装置2からのメール確認周期は、LAN接続部14を介して設定管理部9に与えられて管理され、設定保存部10に保存される。メール確認周期は、適宜、設定登録され、また変更可能である。

【0027】図2は、メール確認周期の設定例17を示す図である。周期19は各ユーザA，B，C毎に設定可能である。また、周期19は時間帯18毎に設定可能である。設定保存部10では、各ユーザ毎および／または時間帯毎に設定されたメール確認周期が保存される。たとえば、ユーザAに対しては、9時～12時の間は30分周期で、12時～17時の間は60分周期でそれぞれメール確認して着信を通知するよう設定される。なお、17時～9時の間はメール確認せず着信を通知しないよう設定される。同様にしてユーザBに対しては、9時～12時の間は30分周期で、12時～15時の間は20分周期で、15時～17時の間は60分周期で、17時～21時の間は120分周期でそれぞれメール確認し、21時～9時の間はメール確認しないよう設定される。ユーザCに対しては、8時～13時の間は30分周期で、13時～19時の間は60分周期でそれぞれメール確認し、19時～8時の間はメール確認しないよう設定される。

【0028】設定管理部9は、入力されたメール確認周期からメール確認周期表を作成する。メール確認周期表とは、各ユーザ毎のメール確認周期を統合し、何時にどのユーザのメールを確認するかをまとめたものであり、メール確認周期の設定登録や変更があれば更新される。

【００２９】図３は、メール確認周期表２０の例を示す図である。メール確認周期表２０は、時刻２１とメール確認を行うユーザ２２とを互いに対応付けて構成される。ここでは、８時および８時３０分にユーザＣ、９時および９時３０分にユーザＡ，Ｂ，Ｃ、…、１２時にユーザＡ，Ｂ，Ｃ、１２時２０分にユーザＢ、１２時３０分にユーザＣ、１２時４０分にユーザＢ、１３時にユーザＡ，Ｂ，Ｃ、…、１５時、１６時および１７時にユーザＡ，Ｂ，Ｃ、１８時にユーザＣ、１９時にユーザＢ，Ｃのメールをそれぞれ確認して着信を通知することが示されている。

【００３０】ユーザ情報保存部１１には、ユーザ毎の通信装置のアドレスが保存される。ここでは、通信装置２から入力された通信装置３を表す電話番号が保存される。

【００３１】時刻管理部１２は、作成されたメール確認周期表２０に基づく確認すべき時刻２１となったときにメール確認要求命令を出力する。新着メール確認部１３は、メール確認要求命令に従って、メール確認周期表２０で時刻２１に対応付けられたユーザ２２についてのメールリストを作成する。

【００３２】図４は、メールリスト２３の例を示す図である。メールリスト２３は、メール保存部８に記憶されたメールのヘッダから発信者および件名を、また前記識別子をそれぞれ抽出して、作成される。ここでは、メール番号２４、新着情報２５、発信者情報２６および件名２７が互いに対応付けられており、メール番号１の発信者は「ｔａｎａｋａ@…」で、件名は「会議」であり、メール番号２の発信者は「ｙａｍａｄａ@…」で、件名は「出張報告」であり、メール番号３の発信者は「ｓｕｚｕｋｉ@…」で、件名は「連絡」であり、メール番号４の発信者は「ｔａｋａｈａｓｉ@…」で、件名は「会議」である。また、メール番号３，４のメールが新着である。メールリスト２３は図４に示される形態に限るものではなく、メールのサイズや本文の一部分などを含んで構成するようにしても構わない。

【００３３】新着メール確認部１３は、また、作成したメールリスト２３の中に着信通知をまだ行っていない新着メールがあるか否かを判断し、ある場合にはユーザ情報保存部１１に保存されたユーザ通信装置のアドレスを取得し、電話接続部１５に与えて着信通知を要求する。ここで、新着メール確認部１３は、アドレスとともに作成したメールリスト２３を電話接続部１５に与える。

【００３４】電話接続部１５は、通信装置３に発呼可能に構成され、たとえば電話モデムを備え、新着メール確認部１３からのアドレスを発呼し、メールリストを送信する。このようにして、メールサーバ４は通信装置３に対して新着メールの着信通知を行う。なお、着信通知が成功したとき、電話接続部１５は着信通知が成功したメールをメール管理部７に報告する。

【００３５】図５は、メールサーバ４の新着メールの着信通知動作を示すフローチャートである。ステップＳ１では、時刻管理部１２がメール確認周期表２０に基づく時刻２１となったか否かを判断し、当該時刻２１となるとメール確認要求命令を出力する。次のステップＳ２では、新着メール確認部１３がメール確認要求命令に従い、メール保存部８に保存された時刻２１に対応するユーザ２２のメールを参照して、メールリスト２３を作成する。次のステップＳ３では、新着メール確認部１３が作成したメールリスト２３の中に新着メールがあるか否かを判断し、ある場合にはステップＳ４に進み、ない場合にはステップＳ１に戻る。

【００３６】ステップＳ４では、新着メール確認部１３は着信通知を行うユーザの通信装置の電話番号をユーザ情報保存部１１から取得し、電話接続部１５にメールリスト２３とともに与える。次のステップＳ５では、電話接続部１５が電話番号を発呼し接続を試みる。次のステップＳ６では、電話接続部１５が接続が成功したか否かを判断し、成功したときにはステップＳ７に進み、成功しなかったときにはステップＳ１に戻る。

【００３７】ステップＳ７では、電話接続部１５はメールリスト２３を送信する。次のステップＳ８では、電話接続部１５がメールリスト２３の送信が成功したか否かを判断し、成功した場合には成功したメールをメール管理部７に報告してステップＳ９に進み、成功しなかった場合にはステップＳ１に戻る。ステップＳ９では、メール管理部７は着信通知を行ったメールのヘッダに着信通知済みであることを表す識別子を付加する。そしてステップＳ１に戻る。

【００３８】以上のように本形態の電子メールシステムによれば、設定管理部９で管理され設定保存部１０に保存されるメール確認周期１９は通信装置２から予め入力されるので、メール受信量や受信時間帯などを考慮して設定することができる。したがって、メールサーバ４は通信装置３に対して最適な条件で効率良く着信通知することができる。メールサーバ４から通信装置３に着信が通知されるので、通信装置３のユーザはメールサーバ４に着信メールの有無を確認する必要はない。また、ユーザによって設定された周期で着信を通知するので、通信装置３が頻繁にメールを受信するユーザの通信装置であった場合、電話網６の使用料金を低減することができる。

【００３９】特に、メール確認周期１９はユーザＡ，Ｂ，Ｃ毎に設定されるので、各ユーザＡ，Ｂ，Ｃのメール受信量や受信時間帯などを考慮した最適な条件で効率良く着信を通知することができる。また、メール確認周期１９は時間帯１８毎に設定されるので、時間帯毎の最適な条件で効率良く着信を通知することができる。さらに、メール管理部７がメールに対して付加する識別子によって、メール保存部８に保存されているメールが新着

メールであるか着信通知を行ったメールであるかを容易に識別することができ、着信通知済みのメールを保存するための大容量な記憶領域は不要である。なお、メールが通信装置3に与えられてメール保存部8から削除されたときに、前記識別子をともに削除するよう構成することが好ましい。これによって、メールの状態変化に容易に対応することができる。

【0040】

【発明の効果】以上のように本発明によれば、メール確認時刻となるとメールリストが作成され、該メールリスト中に着信通知をまだ行っていない新着メールがある場合、ユーザのアドレスが発信されて作成されたメールリストが送信され、このようにして新着メールの着信が通知される。メール確認周期は通信装置からメール受信量や受信時間帯などを考慮して設定し入力することができ、したがって最適な条件で効率良く着信を通知することができる。メールサーバから通信装置に着信が通知されるので、通信装置のユーザは着信メールの有無を確認する必要がなく、利便性が向上する。また、メールサーバはユーザによって設定された周期で着信を通知するので、頻繁にメールを受信するユーザの通信装置では回線使用料金を低減することができる。

【0041】また本発明によれば、前記メール確認周期はユーザ毎に設定されるので、各ユーザのメール受信量や受信時間帯などを考慮した最適な条件で効率良く着信を通知することができる。

【0042】また本発明によれば、前記メール確認周期は時間帯毎に設定されるので、時間帯毎の最適な条件で効率良く着信を通知することができる。

【0043】また本発明によれば、着信通知を行ったメールのヘッダに着信通知済みであることを表す識別子を付加するようにしたので、大容量な記憶容量を必要とすることなく保存されているメールが新着メールであるか着信通知を行ったメールであるかを容易に識別することができる。

【図面の簡単な説明】

【図1】本発明の実施の一形態である電子メールシステムを示す図である。

【図2】メール確認周期の設定例17を示す図である。

【図3】メール確認周期表20の例を示す図である。

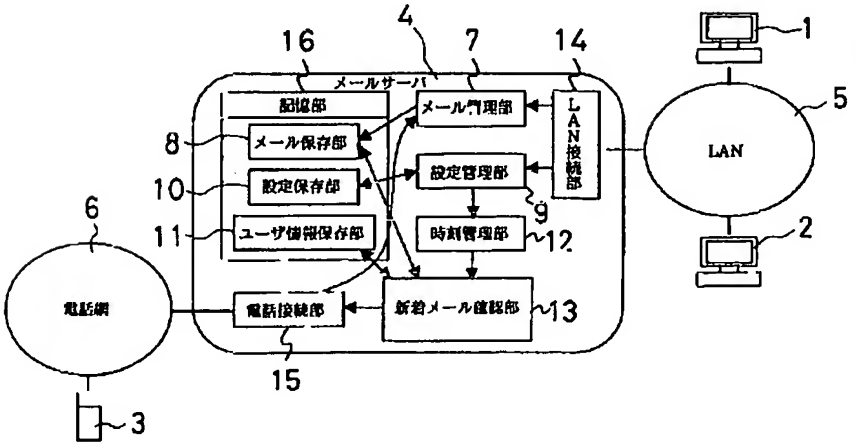
【図4】メールリスト23の例を示す図である。

【図5】メールサーバ4の新着メールの着信通知動作を示すフローチャートである。

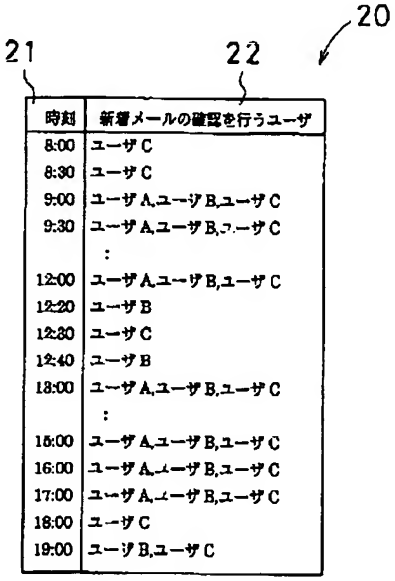
【符号の説明】

1～3　通信装置
4　メールサーバ
5　LAN（ローカルエリアネットワーク）
6　電話網
7　メール管理部
8　メール保存部
9　設定管理部
10　設定保存部
11　ユーザ情報保存部
12　時刻管理部
13　新着メール確認部
14　LAN接続部
15　電話接続部
16　記憶部
20　メール確認周期表
23　メールリスト

【図1】

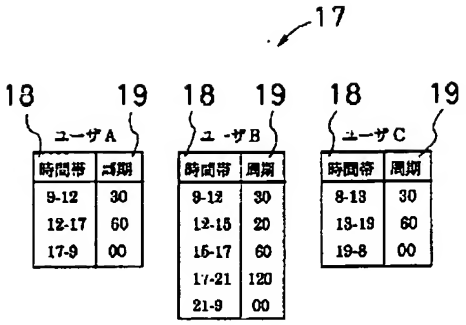



【図3】



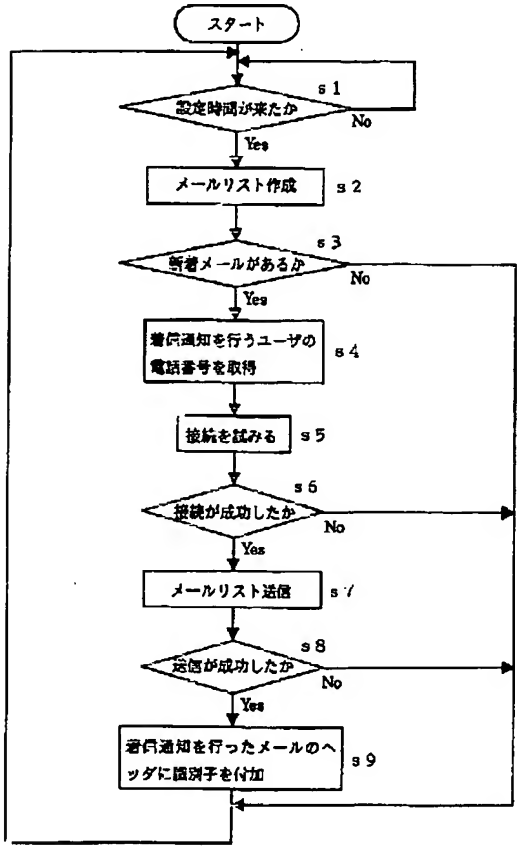

| 時刻 | 新着メールの確認を行うユーザ |
|---|---|
| 8:00 | ユーザC |
| 8:30 | ユーザC |
| 9:00 | ユーザA,ユーザB,ユーザC |
| 9:30 | ユーザA,ユーザB,ユーザC |
| | ： |
| 12:00 | ユーザA,ユーザB,ユーザC |
| 12:20 | ユーザB |
| 12:30 | ユーザC |
| 12:40 | ユーザB |
| 18:00 | ユーザA,ユーザB,ユーザC |
| | ： |
| 15:00 | ユーザA,ユーザB,ユーザC |
| 16:00 | ユーザA,ユーザB,ユーザC |
| 17:00 | ユーザA,ユーザB,ユーザC |
| 18:00 | ユーザC |
| 19:00 | ユーザB,ユーザC |

【図2】




【図4】


【図5】

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フロントページの続き

Fターム(参考) 5B089 GA12 GB03 JA31 KC30 KC59
LA03 LA13
5K030 GA06 GA18 HA06 HB15 KA01
KA05 KA06 KA21 LD14 LD18
LE12
5K033 BA13 DB12 DB14 DB16 EA07
EC04
9A001 JJ14 JJ27 JJ72

* NOTICES *



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## CLAIMS

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[Claim(s)]
[Claim 1]A mailing list is created according to an e-mail acknowledge request command outputted when it has the following and becomes the time based on said mail confirming period table, When arrived mail which has not performed an incoming call notice yet is in this mailing list, An address of a user's communication apparatus is acquired and sent from said User Information preserving part, An electronic mail system is provided with a mail server connected by two or more communication apparatus, each communication apparatus, and communications networks in which transmission and reception of an E-mail transmitting a created mailing list and performing an incoming call notice of arrived mail are possible, and transmit and receive an E-mail between communication apparatus via a mail server.
A mail administration preserving part which said mail server manages received mail and is saved.
A mail confirming period management preserving part which manages and saves an inputted mail confirming period and creates a mail confirming period table from this mail confirming period.
The User Information preserving part which saves an address of a user's communication apparatus.

[Claim 2]A mail confirming period management preserving part of said mail server, Manage, save an inputted mail confirming period for every user, and the User Information preserving part of said mail server, Save an address of a communication apparatus for every user, and said mail server, A mailing list about a predetermined user is created according to an e-mail acknowledge request command outputted when it becomes the time corresponding to a predetermined user based on said mail confirming period table, The electronic mail system according to claim 1 transmitting a mailing list which acquired an address of a predetermined user's communication apparatus from said User Information preserving part, was sent, and was created, and performing an incoming call notice of arrived mail when arrived mail which has not performed an incoming call notice yet is in this mailing list.
[Claim 3]The electronic mail system according to claim 1 or 2, wherein a mail confirming period management preserving part of said mail server manages and saves a mail confirming period for every time zone.
[Claim 4]An identifier which expresses an incoming call notice situation with mail saved at a mail administration preserving part of said mail server is added, It is judged whether arrived mail which has not

performed an incoming call notice yet is in a mailing list created by this identifier, And an electronic mail system of any one statement among claims 1-3 after performing an incoming call notice of arrived mail, wherein an identifier which expresses that it is incoming call notice ending to mail saved at a mail administration preserving part is added.

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[Translation done.]

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## DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention]Especially this invention relates to the system which notifies the arrival of the arrived mail of a mail server about an electronic mail system.
[0002]
[Description of the Prior Art]An electronic mail system is provided with the mail server connected by two or more communication apparatus which can transmit and receive an E-mail, each communication apparatus, and the communications network, and an E-mail is transmitted and received between communication apparatus via a mail server. Generally in such an electronic mail system, the E-mail sent from the communication apparatus is once saved at a mail server, and there is nothing to a partner communication apparatus in a report directly. Therefore, although a communication apparatus performs check operation of the mail arrival existence of an E-mail to a mail server, The incoming call notice system which reduces troublesome operation and time and effort of the user of the communication apparatus for this check operation is indicated by JP,63-292847,A, JP,5-48645,A, and JP,10-107835,A, for example. In JP,63-292847,A and JP,5-48645,A, the mail server which received the E-mail has notified mail arrival promptly to a communication apparatus. In JP,10-107835,A, e-mail was taken out from the receiving memory, for example at intervals of the fixed time for 10 minutes, and mail arrival is notified.
[0003]On the other hand, the E-mail saved at a mail server has the arrived mail which has not performed the incoming call notice yet, and the mail which already performed the incoming call notice, At the time of an incoming call notice, the contents of the number of preservation mails, calling origin information, and the text, etc. are required as notification information, and it is necessary to manage an E-mail in a mail server.
[0004]The mail server of said JP,5-48645,A is provided with the list which stores the number of e-mail for every communication terminal of each user. When the number of e-mail of a mail server has change (i.e., when the time of receiving e-mail and a communication apparatus incorporate e-mail from a communication apparatus), the number of e-mail of said list was updated, it did in this way, and the number of e-mail for every user is grasped. However, in this mail server, only the number of e-mail is managed, and it is not distinguished and managed whether the mail saved is arrived mail or it is the mail which already performed the incoming call notice.

[0005]In the mail server of said JP,10-107835,A. E-mail was taken out from the receiving memory with the certain time interval, it judged whether the conditions as which the data of the address of a sending agency, dispatch time, a subject (title), the text, etc. was beforehand determined to an extract and each data would be suited, and mail arrival is notified by the method according to the decision result. For example, in suiting said conditions, the address and subject of a sending agency, or the e-mail whole sentence has notified mail arrival. Mail arrival is not notified when it does not suit said conditions. Since the mail taken out from the receiving memory is saved in other storage areas, only arrived mail is saved at a receiving memory.
[0006]
[Problem(s) to be Solved by the Invention]By the incoming call notice system of said JP,63-292847,A and JP,5-48645,A, since mail arrival is notified whenever an E-mail is received, in a user's communication apparatus which e-mail reaches frequently, the number of times of an incoming call notice increases, and the usage fee of a communication line becomes large. In the mail arrival communications system of said JP,10-107835,A, mail arrival is notified with the same fixed time interval also to which user's communication apparatus, and neither the difference in each user's e-mail receiving quantities nor the difference in the e-mail receiving quantities by a time zone is taken into consideration. Therefore, in the communication apparatus of a user with few e-mail receiving quantities, e-mail check operation more than needed will be performed, and processing more than needed will be performed in the mail server to such a communication apparatus. In the communication apparatus of a user with many e-mail receiving quantities, the number of times of an incoming call notice will run short, and an incoming call notice will be overdue.
[0007]On the other hand, about management of the E-mail saved at a mail server, when the number of e-mail of a mail server has change, the number of e-mail of a list is updated, for this reason said JP,5-48645,A takes time and effort. Since only the number of e-mail is managed, it is undistinguishable whether the mail saved is arrived mail or it is mail of finishing [ an incoming call notice ]. In said JP,10-107835,A, although it is distinguishable whether the mail saved is arrived mail or it is mail of finishing [ an incoming call notice ] therefore, other storage areas other than a receiving memory are required.
[0008]In the electronic mail system which realized the communication apparatus by the telephone by which high convenience and miniaturization are demanded in order to carry, especially above-mentioned inconvenience is remarkable.
[0009]The purposes of this invention are to provide the electronic mail system which can do the incoming call notice according to each user's e-mail receiving quantities, a receiving time belt, etc., and to provide the electronic mail system of the outstanding convenience which classifies reception mail into new arrival and incoming call notice ending, manages it, and can save it with a still smaller storage capacity.
[0010]
[Means for Solving the Problem]In an electronic mail system this invention is provided with a mail server connected by two or more communication apparatus, each communication apparatus, and communications networks which can transmit and receive an E-mail, and transmit and receive an E-mail between communication apparatus via a mail server, A mail administration preserving part which said mail server manages received mail and is saved, A mail confirming period management preserving part which manages and saves an inputted mail confirming period and creates a mail confirming period table from this mail confirming period, It has the User Information preserving part which saves an address of a user's

communication apparatus, A mailing list is created according to an e-mail acknowledge request command outputted when it becomes the time based on said mail confirming period table, When arrived mail which has not performed an incoming call notice yet is in this mailing list, it is an electronic mail system transmitting a mailing list which acquired an address of a user's communication apparatus from said User Information preserving part, was sent, and was created, and performing an incoming call notice of arrived mail.

[0011]If this invention is followed, when an E-mail will be sent from a communication apparatus, it is received by mail server and the E-mail concerned is once saved at the mail administration preserving part. A mail confirming period is beforehand inputted into a mail server from a communication apparatus, and a mail confirming period table is created from this cycle. Suitably, a mail confirming period is constituted so that registration of the establishment and change are possible.

[0012]When it becomes the time based on a mail confirming period table, a mailing list is created according to an e-mail acknowledge request command outputted. It is judged whether arrived mail which has not performed an incoming call notice yet is in this mailing list, and, in a certain case, an address of a user's communication apparatus saved at the User Information preserving part is acquired and sent. And a created mailing list is transmitted, it does in this way, and an incoming call notice of arrived mail is performed. If incorporation operation of an E-mail is performed with a user's communication apparatus saved at said User Information preserving part, for example, a portable telephone, a mail server will turn a once saved E-mail to a portable telephone, and will transmit. Thus, on the other hand, an E-mail from a communication apparatus is given to an another side communication apparatus.

[0013]Since it is beforehand inputted from a communication apparatus, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server can be set up in consideration of e-mail receiving quantities, a receiving time belt, etc. Therefore, mail arrival can be efficiently notified on optimal conditions. Since mail arrival is notified to a communication apparatus from a mail server, the user of communication apparatus, such as a portable telephone, can save time and effort which checks existence of received mail to a mail server. Since it is not notified whenever a mail server receives e-mail, but it notifies with a cycle set up by user, connection-fees gold can be controlled in a communication apparatus of a user who receives e-mail frequently.

[0014]This invention a mail confirming period management preserving part of said mail server, Manage, save an inputted mail confirming period for every user, and the User Information preserving part of said mail server, Save an address of a communication apparatus for every user, and said mail server, A mailing list about a predetermined user is created according to an e-mail acknowledge request command outputted when it becomes the time corresponding to a predetermined user based on said mail confirming period table, When arrived mail which has not performed an incoming call notice yet is in this mailing list, a mailing list which acquired an address of a predetermined user's communication apparatus from said User Information preserving part, was sent, and was created is transmitted, and an incoming call notice of arrived mail is performed.

[0015]If this invention is followed, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server will be set up for every user. Therefore, mail arrival can be efficiently notified on optimal conditions in consideration of each user's e-mail receiving quantities, a receiving time belt, etc.

[0016]This invention manages a mail confirming period for every time zone, and a mail confirming period management preserving part of said mail server saves it.

[0017]If this invention is followed, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server will be set up for every time zone. Therefore, mail arrival can be efficiently notified on optimal conditions for every time zone.

[0018]To this invention, an identifier which expresses an incoming call notice situation with mail saved at a mail administration preserving part of said mail server is added, After judging whether arrived mail which has not performed an incoming call notice yet is in a mailing list created by this identifier and performing an incoming call notice of arrived mail, an identifier which expresses that it is incoming call notice ending to mail saved at a mail administration preserving part is added.

[0019]If this invention is followed, an identifier showing being incoming call notice ending will be added to a header of mail which performed an incoming call notice. By this identifier, it is easily discriminable whether mail saved is arrived mail or it is the mail which performed an incoming call notice. Since discernment of e-mail is possible only by adding an identifier, a storage area [ large scale / for saving mail of finishing / an incoming call notice ] is unnecessary. It can respond to an e-mail change of state easily with constituting so that said identifier may also be deleted if e-mail is given to a communication apparatus and deleted.

[0020]

[Embodiment of the Invention]Drawing 1 is a figure showing the electronic mail system which is one gestalt of operation of this invention. An electronic mail system is provided with the mail server 4 connected by the communication apparatus 1-3, each communication apparatus 1-3, and communications network of the plurality (this gestalt 3) which can transmit and receive an E-mail, and an E-mail is transmitted and received among the communication apparatus 1-3 via the mail server 4.

[0021]Especially this invention is realized using the communication apparatus constituted by the art of existing [ the communication apparatus 1-3 ] about the system which notifies the arrival of the E-mail in the mail server 4. This gestalt explains the example which realized the communication apparatus 1 and 2 with communication apparatus, such as a personal computer, and was realized with communication apparatus, such as telephone which can carry the communication apparatus 3.

[0022]Although communication is performed via the mail server 4 and dedicated lines, such as LAN(Local Area Network) 5, you may make it the communication apparatus 1 and 2 communicate via public lines, such as a telephone line and an ISDN circuit, besides LAN5. The communication apparatus 3 communicates via the mail server 4 and the telephone network 6.

[0023]The mail server 4 connected to networks, such as the Internet, is provided with the mail administration department 7, the setting-out Management Department 9, the time-of-day-control department 12, the arrived mail check part 13, the LAN connection part 14, the telephone connection 15, and the storage parts store 16. The storage parts store 16 is provided with the mail drop part 8, the setting-out preserving part 10, and the User Information preserving part 11.

[0024]Via the LAN connection part 14, the E-mail from the communication apparatus 3 is given to the mail administration department 7 via the telephone connection 15, respectively, and the E-mail from the communication apparatus 1 and 2 received with the mail server 4 is managed, and is further saved in the mail drop part 8. The mail drop part 8 comprises a set of each user's mail box, for example.

[0025]The mail administration department 7 adds the identifier which expresses an incoming call notice situation to the mail saved in the mail drop part 8. By this identifier, the arrived mail check part 13 can judge easily whether the arrived mail which has not performed the incoming call notice yet is in the mailing list created as mentioned later. The mail administration department 7 adds the identifier which expresses that it is incoming call notice ending to the mail saved in the mail drop part 8, after performing the incoming call notice of arrived mail. As said identifier, it is the character string beforehand provided in one, and it is preferred to add the low character string of a possibility of being contained in a mail text, for example, "X-tsuuchi:yes."

[0026]It is the mail confirming period inputted into the mail server 4, and the mail confirming period from the communication apparatus 2 which is a terminal as a mail client is given and managed by the setting-out Management Department 9 via the LAN connection part 14, and is saved at the setting-out preserving part 10. Suitably, registration of the establishment of the mail confirming period is carried out, and it can be changed.

[0027]Drawing 2 is a figure showing the example 17 of setting out of a mail confirming period. The cycle 19 can be set to each user A, B, and C of every. The cycle 19 can be set up every time zone 18. In the setting-out preserving part 10, the mail confirming period set up for every user and/or every time zone is saved. For example, it is set up carry out between 9:00 to 12:00, carry out an e-mail check in a cycle of 60 minutes between 12:00 to 17:00 in a cycle of 30 minutes, respectively, and notify mail arrival to the user A. It is set up between 17:00 to 9:00 not carry out an e-mail check and not notify mail arrival. Similarly, to the user B, it is cycles of 30 minutes between 9:00 to 12:00, and in a cycle of 20 minutes, carry out between 15:00 to 17:00 between 12:00 to 15:00, it is carried out, an e-mail check is carried out in a cycle of 120 minutes between 17:00 to 21:00 in a cycle of 60 minutes, respectively, and it is set up between 21:00 to 9:00 not carry out an e-mail check. To the user C, it carries out between 8:00 to 13:00, an e-mail check is carried out in a cycle of 60 minutes between 13:00 to 19:00 in a cycle of 30 minutes, respectively, and it is set up between 19:00 to 8:00 not carry out an e-mail check.

[0028]The setting-out Management Department 9 creates a mail confirming period table from the inputted mail confirming period. The mail confirming period for every user is unified with a mail confirming period table, and it summarizes at what time which user's mail is checked, and it will be updated if there are registration of the establishment of a mail confirming period and change.

[0029]Drawing 3 is a figure showing the example of the mail confirming period table 20. The mail confirming period table 20 matches the time 21 and the user 22 of each other who performs an e-mail check, and is constituted. Here, at the user C and 9:30 [ 9 ] at 8:30 [ 8 ] The user A, B, and C. At the user B and 12:30 at the user A, B, and C and 12:20 at -- and 12:00 The user C. The user B will be shown at 12:40 and the user A, B, and C, --, checking the user C at the user A, B, and C and 18:00, checking the users' B and C mail at 19:00 at 15:00, 16:00, and 17:00, respectively, and notifying mail arrival are shown at 13:00.

[0030]At the User Information preserving part 11, the address of the communication apparatus for every user is saved. Here, the telephone number showing the communication apparatus 3 inputted from the communication apparatus 2 is saved.

[0031]The time-of-day-control department 12 outputs an e-mail acknowledge request command, when it becomes the time 21 based on the created mail confirming period table 20 which should be checked. The

arrived mail check part 13 creates the mailing list about the user 22 matched with the time 21 in the mail confirming period table 20 according to an e-mail acknowledge request command.

[0032]Drawing 4 is a figure showing the example of the mailing list 23. From the header of the mail memorized by the mail drop part 8, the mailing list 23 extracts said identifier again, respectively, and an addresser and a subject name are created. Here, the mail number 24, What's New 25, the originator information 26, and the subject name 27 are matched mutually, and the addresser of the mail number 1 is "tanaka@ --", A subject name is a "meeting", the addresser of the mail number 2 is "yamada@ --", a subject name is "a business trip report", the addresser of the mail number 3 is "suzuki@ --", a subject name is "connection", the addresser of the mail number 4 is "takahasi@ --", and a subject name is "a meeting." Mail of the mail numbers 3 and 4 is new arrival. The mailing list 23 is not restricted to the gestalt shown in drawing 4, and you may make it constitute it including the size of e-mail, or a part of text.

[0033]The arrived mail check part 13 judges whether the arrived mail which has not performed the incoming call notice yet is in the created mailing list 23, acquires the address of the user communication device which was saved at the User Information preserving part 11 in a certain case, gives it to the telephone connection 15, and requires an incoming call notice again. Here, the arrived mail check part 13 gives the mailing list 23 created with the address to the telephone connection 15.

[0034]The telephone connection 15 is constituted by the communication apparatus 3 so that call origination is possible, for example, it is provided with a telephone modem, carries out call origination of the address from the arrived mail check part 13, and transmits a mailing list. Thus, the mail server 4 performs the incoming call notice of arrived mail to the communication apparatus 3. When an incoming call notice is successful, the telephone connection 15 reports the mail with which the incoming call notice was successful to the mail administration department 7.

[0035]Drawing 5 is a flow chart which shows incoming call notice operation of the arrived mail of the mail server 4. In Step S1, if the time-of-day-control department 12 judges whether it became the time 21 based on the mail confirming period table 20 and serves as the time 21 concerned, an e-mail acknowledge request command will be outputted. In the following step S2, the arrived mail check part 13 creates the mailing list 23 with reference to mail of the user 22 corresponding to the time 21 saved in the mail drop part 8 according to the e-mail acknowledge request command. In the following step S3, it judges whether arrived mail is in the mailing list 23 which the arrived mail check part 13 created, and when in a certain case it progresses to step S4 and there is nothing, it returns to Step S1.

[0036]In step S4, the arrived mail check part 13 acquires the telephone number of the communication apparatus of the user who performs an incoming call notice from the User Information preserving part 11, and gives it to the telephone connection 15 with the mailing list 23. In the following step S5, the telephone connection 15 carries out call origination of the telephone number, and tries connection. In the following step S6, when the telephone connection 15 judged whether connection was successful, it progresses to Step S7 when it succeeds, and it does not succeed, it returns to Step S1.

[0037]In Step S7, the telephone connection 15 transmits the mailing list 23. In the following step S8, the telephone connection 15 judges whether transmission of the mailing list 23 was successful, the mail which was successful when it succeeded is reported to the mail administration department 7, and when it does not progress and succeed in step S9, it returns to Step S1. In step S9, the mail administration department 7

adds the identifier which expresses that it is incoming call notice ending with the header of the mail which performed the incoming call notice. And it returns to Step S1.

[0038]As mentioned above, according to the electronic mail system of this gestalt, since it is beforehand inputted from the communication apparatus 2, the mail confirming period 19 which is managed at the setting-out Management Department 9, and is saved at the setting-out preserving part 10 can be set up in consideration of e-mail receiving quantities, a receiving time belt, etc. Therefore, the incoming call notice of the mail server 4 can be efficiently carried out on the optimal conditions to the communication apparatus 3. Since mail arrival is notified to the communication apparatus 3 from the mail server 4, the user of the communication apparatus 3 does not need to check the existence of received mail to the mail server 4. Since mail arrival is notified with the cycle set up by the user, when the communication apparatus 3 is a communication apparatus of the user who receives e-mail frequently, the usage fee of the telephone network 6 can be reduced.

[0039]Since especially the mail confirming period 19 is set to every user A, B, and C, mail arrival can be efficiently notified on the optimal conditions in consideration of each user's A, B, and C e-mail receiving quantities, a receiving time belt, etc. Since the mail confirming period 19 is set up every time zone 18, mail arrival can be efficiently notified on the optimal conditions for every time zone. The storage area [ large scale / for being able to identify easily whether the mail saved in the mail drop part 8 is arrived mail or it is the mail which performed the incoming call notice by the identifier which the mail administration department 7 adds to e-mail, and saving mail of finishing / an incoming call notice ] is unnecessary. When e-mail is given to the communication apparatus 3 and deleted from the mail drop part 8, it is preferred to constitute so that said both identifiers may be deleted. By this, it can respond to the change of state of e-mail easily.

[0040]

[Effect of the Invention]The mailing list which the mailing list was created when it became e-mail checking time, and the user's address was sent and was created according to this invention as mentioned above when there was arrived mail which has not performed the incoming call notice yet into this mailing list is transmitted, it does in this way, and the arrival of arrived mail is notified. A mail confirming period can be set up and inputted in consideration of e-mail receiving quantities, a receiving time belt, etc. from a communication apparatus, therefore can notify mail arrival efficiently on the optimal conditions. Since mail arrival is notified to a communication apparatus from a mail server, the user of a communication apparatus does not need to check the existence of received mail, and his convenience improves. Since a mail server notifies mail arrival with the cycle set up by the user, connection-fees gold can be reduced in the communication apparatus of the user who receives e-mail frequently.

[0041]Since said mail confirming period is set up for every user according to this invention, mail arrival can be efficiently notified on the optimal conditions in consideration of each user's e-mail receiving quantities, a receiving time belt, etc.

[0042]Since said mail confirming period is set up for every time zone according to this invention, mail arrival can be efficiently notified on the optimal conditions for every time zone.

[0043]Since the identifier which expresses that it is incoming call notice ending with the header of the mail which performed the incoming call notice was added according to this invention, it is easily discriminable whether the mail saved without needing a large scale storage capacity is arrived mail or it is the mail which

performed the incoming call notice.

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## TECHNICAL FIELD

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[Field of the Invention]Especially this invention relates to the system which notifies the arrival of the arrived mail of a mail server about an electronic mail system.

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## PRIOR ART

[Description of the Prior Art]An electronic mail system is provided with the mail server connected by two or more communication apparatus which can transmit and receive an E-mail, each communication apparatus, and the communications network, and an E-mail is transmitted and received between communication apparatus via a mail server. Generally in such an electronic mail system, the E-mail sent from the communication apparatus is once saved at a mail server, and there is nothing to a partner communication apparatus in a report directly. Therefore, although a communication apparatus performs check operation of the mail arrival existence of an E-mail to a mail server, The incoming call notice system which reduces troublesome operation and time and effort of the user of the communication apparatus for this check operation is indicated by JP,63-292847,A, JP,5-48645,A, and JP,10-107835,A, for example. In JP,63-292847,A and JP,5-48645,A, the mail server which received the E-mail has notified mail arrival promptly to a communication apparatus. In JP,10-107835,A, e-mail was taken out from the receiving memory, for example at intervals of the fixed time for 10 minutes, and mail arrival is notified.

[0003]On the other hand, the E-mail saved at a mail server has the arrived mail which has not performed the incoming call notice yet, and the mail which already performed the incoming call notice, At the time of an incoming call notice, the contents of the number of preservation mails, calling origin information, and the text, etc. are required as notification information, and it is necessary to manage an E-mail in a mail server.

[0004]The mail server of said JP,5-48645,A is provided with the list which stores the number of e-mail for every communication terminal of each user. When the number of e-mail of a mail server has change (i.e., when the time of receiving e-mail and a communication apparatus incorporate e-mail from a communication apparatus), the number of e-mail of said list was updated, it did in this way, and the number of e-mail for every user is grasped. However, in this mail server, only the number of e-mail is managed, and it is not distinguished and managed whether the mail saved is arrived mail or it is the mail which already performed the incoming call notice.

[0005]In the mail server of said JP,10-107835,A. E-mail was taken out from the receiving memory with the certain time interval, it judged whether the conditions as which the data of the address of a sending agency, dispatch time, a subject (title), the text, etc. was beforehand determined to an extract and each data would be suited, and mail arrival is notified by the method according to the decision result. For example, in suiting said conditions, the address and subject of a sending agency, or the e-mail whole sentence has notified mail

arrival. Mail arrival is not notified when it does not suit said conditions. Since the mail taken out from the receiving memory is saved in other storage areas, only arrived mail is saved at a receiving memory.

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## EFFECT OF THE INVENTION

[Effect of the Invention]The mailing list which the mailing list was created when it became e-mail checking time, and the user's address was sent and was created according to this invention as mentioned above when there was arrived mail which has not performed the incoming call notice yet into this mailing list is transmitted, it does in this way, and the arrival of arrived mail is notified. A mail confirming period can be set up and inputted in consideration of e-mail receiving quantities, a receiving time belt, etc. from a communication apparatus, therefore can notify mail arrival efficiently on the optimal conditions. Since mail arrival is notified to a communication apparatus from a mail server, the user of a communication apparatus does not need to check the existence of received mail, and his convenience improves. Since a mail server notifies mail arrival with the cycle set up by the user, connection-fees gold can be reduced in the communication apparatus of the user who receives e-mail frequently.
[0041]In this invention, said mail confirming period is set up for every user.
Therefore, mail arrival can be efficiently notified on the optimal conditions in consideration of each user's e-mail receiving quantities, a receiving time belt, etc.

[0042]In this invention, said mail confirming period is set up for every time zone.
Therefore, mail arrival can be efficiently notified on the optimal conditions for every time zone.

[0043]In this invention, the identifier which expresses that it is incoming call notice ending with the header of the mail which performed the incoming call notice was added.
Therefore, it is easily discriminable whether the mail saved without needing a large-scale storage capacity is arrived mail or it is the mail which performed the incoming call notice.

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## TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]By the incoming call notice system of said JP,63-292847,A and JP,5-48645,A, since mail arrival is notified whenever an E-mail is received, in a user's communication apparatus which e-mail reaches frequently, the number of times of an incoming call notice increases, and the usage fee of a communication line becomes large. In the mail arrival communications system of said JP,10-107835,A, mail arrival is notified with the same fixed time interval also to which user's communication apparatus, and neither the difference in each user's e-mail receiving quantities nor the difference in the e-mail receiving quantities by a time zone is taken into consideration. Therefore, in the communication apparatus of a user with few e-mail receiving quantities, e-mail check operation more than needed will be performed, and processing more than needed will be performed in the mail server to such a communication apparatus. In the communication apparatus of a user with many e-mail receiving quantities, the number of times of an incoming call notice will run short, and an incoming call notice will be overdue.
[0007]On the other hand, about management of the E-mail saved at a mail server, when the number of e-mail of a mail server has change, the number of e-mail of a list is updated, for this reason said JP,5-48645,A takes time and effort. Since only the number of e-mail is managed, it is undistinguishable whether the mail saved is arrived mail or it is mail of finishing [ an incoming call notice ]. In said JP,10-107835,A, although it is distinguishable whether the mail saved is arrived mail or it is mail of finishing [ an incoming call notice ] therefore, other storage areas other than a receiving memory are required.
[0008]In the electronic mail system which realized the communication apparatus by the telephone by which high convenience and miniaturization are demanded in order to carry, especially above-mentioned inconvenience is remarkable.
[0009]The purposes of this invention are to provide the electronic mail system which can do the incoming call notice according to each user's e-mail receiving quantities, a receiving time belt, etc., and to provide the electronic mail system of the outstanding convenience which classifies reception mail into new arrival and incoming call notice ending, manages it, and can save it with a still smaller storage capacity.

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## MEANS

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[Means for Solving the Problem]In an electronic mail system this invention is provided with a mail server connected by two or more communication apparatus, each communication apparatus, and communications networks which can transmit and receive an E-mail, and transmit and receive an E-mail between communication apparatus via a mail server, A mail administration preserving part which said mail server manages received mail and is saved, A mail confirming period management preserving part which manages and saves an inputted mail confirming period and creates a mail confirming period table from this mail confirming period, It has the User Information preserving part which saves an address of a user's communication apparatus, A mailing list is created according to an e-mail acknowledge request command outputted when it becomes the time based on said mail confirming period table, When arrived mail which has not performed an incoming call notice yet is in this mailing list, it is an electronic mail system transmitting a mailing list which acquired an address of a user's communication apparatus from said User Information preserving part, was sent, and was created, and performing an incoming call notice of arrived mail.
[0011]If this invention is followed, when an E-mail will be sent from a communication apparatus, it is received by mail server and the E-mail concerned is once saved at the mail administration preserving part. A mail confirming period is beforehand inputted into a mail server from a communication apparatus, and a mail confirming period table is created from this cycle. Suitably, a mail confirming period is constituted so that registration of the establishment and change are possible.
[0012]When it becomes the time based on a mail confirming period table, a mailing list is created according to an e-mail acknowledge request command outputted. It is judged whether arrived mail which has not performed an incoming call notice yet is in this mailing list, and, in a certain case, an address of a user's communication apparatus saved at the User Information preserving part is acquired and sent. And a created mailing list is transmitted, it does in this way, and an incoming call notice of arrived mail is performed. If incorporation operation of an E-mail is performed with a user's communication apparatus saved at said User Information preserving part, for example, a portable telephone, a mail server will turn a once saved E-mail to a portable telephone, and will transmit. Thus, on the other hand, an E-mail from a communication apparatus is given to an another side communication apparatus.
[0013]Since it is beforehand inputted from a communication apparatus, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server can be set up in

consideration of e-mail receiving quantities, a receiving time belt, etc. Therefore, mail arrival can be efficiently notified on optimal conditions. Since mail arrival is notified to a communication apparatus from a mail server, the user of communication apparatus, such as a portable telephone, can save time and effort which checks existence of received mail to a mail server. Since it is not notified whenever a mail server receives e-mail, but it notifies with a cycle set up by user, connection-fees gold can be controlled in a communication apparatus of a user who receives e-mail frequently.

[0014]This invention a mail confirming period management preserving part of said mail server, Manage, save an inputted mail confirming period for every user, and the User Information preserving part of said mail server, Save an address of a communication apparatus for every user, and said mail server, A mailing list about a predetermined user is created according to an e-mail acknowledge request command outputted when it becomes the time corresponding to a predetermined user based on said mail confirming period table, When arrived mail which has not performed an incoming call notice yet is in this mailing list, a mailing list which acquired an address of a predetermined user's communication apparatus from said User Information preserving part, was sent, and was created is transmitted, and an incoming call notice of arrived mail is performed.

[0015]If this invention is followed, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server will be set up for every user. Therefore, mail arrival can be efficiently notified on optimal conditions in consideration of each user's e-mail receiving quantities, a receiving time belt, etc.

[0016]This invention manages a mail confirming period for every time zone, and a mail confirming period management preserving part of said mail server saves it.

[0017]If this invention is followed, a mail confirming period managed and saved by a mail confirming period management preserving part of a mail server will be set up for every time zone. Therefore, mail arrival can be efficiently notified on optimal conditions for every time zone.

[0018]To this invention, an identifier which expresses an incoming call notice situation with mail saved at a mail administration preserving part of said mail server is added, After judging whether arrived mail which has not performed an incoming call notice yet is in a mailing list created by this identifier and performing an incoming call notice of arrived mail, an identifier which expresses that it is incoming call notice ending to mail saved at a mail administration preserving part is added.

[0019]If this invention is followed, an identifier showing being incoming call notice ending will be added to a header of mail which performed an incoming call notice. By this identifier, it is easily discriminable whether mail saved is arrived mail or it is the mail which performed an incoming call notice. Since discernment of e-mail is possible only by adding an identifier, a storage area [ large scale / for saving mail of finishing / an incoming call notice ] is unnecessary. It can respond to an e-mail change of state easily with constituting so that said identifier may also be deleted if e-mail is given to a communication apparatus and deleted.

[0020]

[Embodiment of the Invention]Drawing 1 is a figure showing the electronic mail system which is one gestalt of operation of this invention. An electronic mail system is provided with the mail server 4 connected by the communication apparatus 1-3, each communication apparatus 1-3, and communications network of the plurality (this gestalt 3) which can transmit and receive an E-mail, and an E-mail is transmitted and received

among the communication apparatus 1-3 via the mail server 4.

[0021]Especially this invention is realized using the communication apparatus constituted by the art of existing [ the communication apparatus 1-3 ] about the system which notifies the arrival of the E-mail in the mail server 4. This gestalt explains the example which realized the communication apparatus 1 and 2 with communication apparatus, such as a personal computer, and was realized with communication apparatus, such as telephone which can carry the communication apparatus 3.

[0022]Although communication is performed via the mail server 4 and dedicated lines, such as LAN(Local Area Network) 5, you may make it the communication apparatus 1 and 2 communicate via public lines, such as a telephone line and an ISDN circuit, besides LAN5. The communication apparatus 3 communicates via the mail server 4 and the telephone network 6.

[0023]The mail server 4 connected to networks, such as the Internet, is provided with the mail administration department 7, the setting-out Management Department 9, the time-of-day-control department 12, the arrived mail check part 13, the LAN connection part 14, the telephone connection 15, and the storage parts store 16. The storage parts store 16 is provided with the mail drop part 8, the setting-out preserving part 10, and the User Information preserving part 11.

[0024]Via the LAN connection part 14, the E-mail from the communication apparatus 3 is given to the mail administration department 7 via the telephone connection 15, respectively, and the E-mail from the communication apparatus 1 and 2 received with the mail server 4 is managed, and is further saved in the mail drop part 8. The mail drop part 8 comprises a set of each user's mail box, for example.

[0025]The mail administration department 7 adds the identifier which expresses an incoming call notice situation to the mail saved in the mail drop part 8. By this identifier, the arrived mail check part 13 can judge easily whether the arrived mail which has not performed the incoming call notice yet is in the mailing list created as mentioned later. The mail administration department 7 adds the identifier which expresses that it is incoming call notice ending to the mail saved in the mail drop part 8, after performing the incoming call notice of arrived mail. As said identifier, it is the character string beforehand provided in one, and it is preferred to add the low character string of a possibility of being contained in a mail text, for example, "X-tsuuchi:yes."

[0026]It is the mail confirming period inputted into the mail server 4, and the mail confirming period from the communication apparatus 2 which is a terminal as a mail client is given and managed by the setting-out Management Department 9 via the LAN connection part 14, and is saved at the setting-out preserving part 10. Suitably, registration of the establishment of the mail confirming period is carried out, and it can be changed.

[0027]Drawing 2 is a figure showing the example 17 of setting out of a mail confirming period. The cycle 19 can be set to each user A, B, and C of every. The cycle 19 can be set up every time zone 18. In the setting-out preserving part 10, the mail confirming period set up for every user and/or every time zone is saved. For example, it is set up carry out between 9:00 to 12:00, carry out an e-mail check in a cycle of 60 minutes between 12:00 to 17:00 in a cycle of 30 minutes, respectively, and notify mail arrival to the user A. It is set up between 17:00 to 9:00 not carry out an e-mail check and not notify mail arrival. Similarly, to the user B, it is cycles of 30 minutes between 9:00 to 12:00, and in a cycle of 20 minutes, carry out between 15:00 to 17:00 between 12:00 to 15:00, it is carried out, an e-mail check is carried out in a cycle of 120 minutes

between 17:00 to 21:00 in a cycle of 60 minutes, respectively, and it is set up between 21:00 to 9:00 not carry out an e-mail check. To the user C, it carries out between 8:00 to 13:00, an e-mail check is carried out in a cycle of 60 minutes between 13:00 to 19:00 in a cycle of 30 minutes, respectively, and it is set up between 19:00 to 8:00 not carry out an e-mail check.

[0028]The setting-out Management Department 9 creates a mail confirming period table from the inputted mail confirming period. The mail confirming period for every user is unified with a mail confirming period table, and it summarizes at what time which user's mail is checked, and it will be updated if there are registration of the establishment of a mail confirming period and change.

[0029]Drawing 3 is a figure showing the example of the mail confirming period table 20. The mail confirming period table 20 matches the time 21 and the user 22 of each other who performs an e-mail check, and is constituted. Here, at the user C and 9:30 [ 9 ] at 8:30 [ 8 ] The user A, B, and C. At the user B and 12:30 at the user A, B, and C and 12:20 at -- and 12:00 The user C. The user B will be shown at 12:40 and the user A, B, and C, --, checking the user C at the user A, B, and C and 18:00, checking the users' B and C mail at 19:00 at 15:00, 16:00, and 17:00, respectively, and notifying mail arrival are shown at 13:00.

[0030]At the User Information preserving part 11, the address of the communication apparatus for every user is saved. Here, the telephone number showing the communication apparatus 3 inputted from the communication apparatus 2 is saved.

[0031]The time-of-day-control department 12 outputs an e-mail acknowledge request command, when it becomes the time 21 based on the created mail confirming period table 20 which should be checked. The arrived mail check part 13 creates the mailing list about the user 22 matched with the time 21 in the mail confirming period table 20 according to an e-mail acknowledge request command.

[0032]Drawing 4 is a figure showing the example of the mailing list 23. From the header of the mail memorized by the mail drop part 8, the mailing list 23 extracts said identifier again, respectively, and an addresser and a subject name are created. Here, the mail number 24, What's New 25, the originator information 26, and the subject name 27 are matched mutually, and the addresser of the mail number 1 is "tanaka@ --", A subject name is a "meeting", the addresser of the mail number 2 is "yamada@ --", a subject name is "a business trip report", the addresser of the mail number 3 is "suzuki@ --", a subject name is "connection", the addresser of the mail number 4 is "takahasi@ --", and a subject name is "a meeting." Mail of the mail numbers 3 and 4 is new arrival. The mailing list 23 is not restricted to the gestalt shown in drawing 4, and you may make it constitute it including the size of e-mail, or a part of text.

[0033]The arrived mail check part 13 judges whether the arrived mail which has not performed the incoming call notice yet is in the created mailing list 23, acquires the address of the user communication device which was saved at the User Information preserving part 11 in a certain case, gives it to the telephone connection 15, and requires an incoming call notice again. Here, the arrived mail check part 13 gives the mailing list 23 created with the address to the telephone connection 15.

[0034]The telephone connection 15 is constituted by the communication apparatus 3 so that call origination is possible, for example, it is provided with a telephone modem, carries out call origination of the address from the arrived mail check part 13, and transmits a mailing list. Thus, the mail server 4 performs the incoming call notice of arrived mail to the communication apparatus 3. When an incoming call notice is successful, the telephone connection 15 reports the mail with which the incoming call notice was successful

to the mail administration department 7.

[0035]Drawing 5 is a flow chart which shows incoming call notice operation of the arrived mail of the mail server 4. In Step S1, if the time-of-day-control department 12 judges whether it became the time 21 based on the mail confirming period table 20 and serves as the time 21 concerned, an e-mail acknowledge request command will be outputted. In the following step S2, the arrived mail check part 13 creates the mailing list 23 with reference to mail of the user 22 corresponding to the time 21 saved in the mail drop part 8 according to the e-mail acknowledge request command. In the following step S3, it judges whether arrived mail is in the mailing list 23 which the arrived mail check part 13 created, and when in a certain case it progresses to step S4 and there is nothing, it returns to Step S1.

[0036]In step S4, the arrived mail check part 13 acquires the telephone number of the communication apparatus of the user who performs an incoming call notice from the User Information preserving part 11, and gives it to the telephone connection 15 with the mailing list 23. In the following step S5, the telephone connection 15 carries out call origination of the telephone number, and tries connection. In the following step S6, when the telephone connection 15 judged whether connection was successful, it progresses to Step S7 when it succeeds, and it does not succeed, it returns to Step S1.

[0037]In Step S7, the telephone connection 15 transmits the mailing list 23. In the following step S8, the telephone connection 15 judges whether transmission of the mailing list 23 was successful, the mail which was successful when it succeeded is reported to the mail administration department 7, and when it does not progress and succeed in step S9, it returns to Step S1. In step S9, the mail administration department 7 adds the identifier which expresses that it is incoming call notice ending with the header of the mail which performed the incoming call notice. And it returns to Step S1.

[0038]As mentioned above, according to the electronic mail system of this gestalt, since it is beforehand inputted from the communication apparatus 2, the mail confirming period 19 which is managed at the setting-out Management Department 9, and is saved at the setting-out preserving part 10 can be set up in consideration of e-mail receiving quantities, a receiving time belt, etc. Therefore, the incoming call notice of the mail server 4 can be efficiently carried out on the optimal conditions to the communication apparatus 3. Since mail arrival is notified to the communication apparatus 3 from the mail server 4, the user of the communication apparatus 3 does not need to check the existence of received mail to the mail server 4. Since mail arrival is notified with the cycle set up by the user, when the communication apparatus 3 is a communication apparatus of the user who receives e-mail frequently, the usage fee of the telephone network 6 can be reduced.

[0039]Since especially the mail confirming period 19 is set to every user A, B, and C, mail arrival can be efficiently notified on the optimal conditions in consideration of each user's A, B, and C e-mail receiving quantities, a receiving time belt, etc. Since the mail confirming period 19 is set up every time zone 18, mail arrival can be efficiently notified on the optimal conditions for every time zone. The storage area [ large scale / for being able to identify easily whether the mail saved in the mail drop part 8 is arrived mail or it is the mail which performed the incoming call notice by the identifier which the mail administration department 7 adds to e-mail, and saving mail of finishing / an incoming call notice ] is unnecessary. When e-mail is given to the communication apparatus 3 and deleted from the mail drop part 8, it is preferred to constitute so that said both identifiers may be deleted. By this, it can respond to the change of state of e-mail easily.

[Translation done.]

* NOTICES *



1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

## DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1]It is a figure showing the electronic mail system which is one gestalt of operation of this invention.
[Drawing 2]It is a figure showing the example 17 of setting out of a mail confirming period.
[Drawing 3]It is a figure showing the example of the mail confirming period table 20.
[Drawing 4]It is a figure showing the example of the mailing list 23.
[Drawing 5]It is a flow chart which shows incoming call notice operation of the arrived mail of the mail server 4.
[Description of Notations]
1-3 Communication apparatus
4 Mail server
5 LAN (Local Area Network)
6 Telephone network
7 Mail administration department
8 Mail drop part
9 Setting-out Management Department
10 Setting-out preserving part
11 User Information preserving part
12 Time-of-day-control department
13 Arrived mail check part
14 LAN connection part
15 Telephone connection
16 Storage parts store
20 Mail confirming period table
23 Mailing list

[Translation done.]

* NOTICES *



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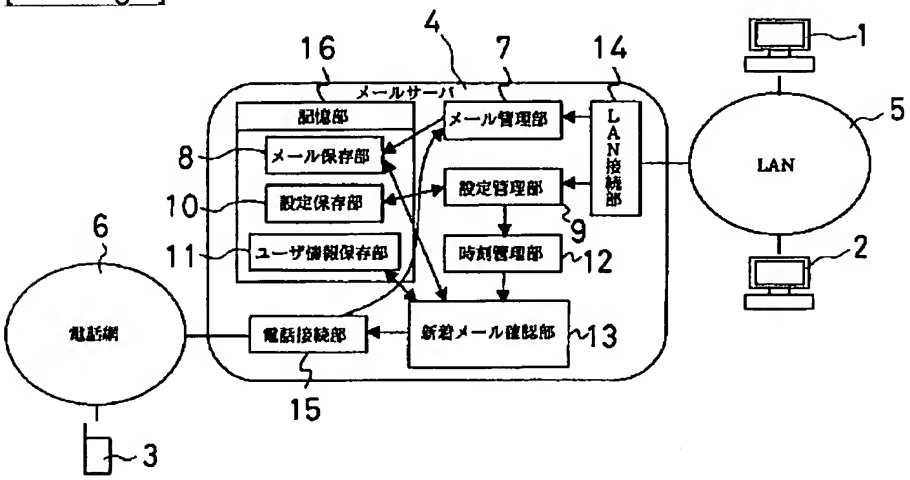
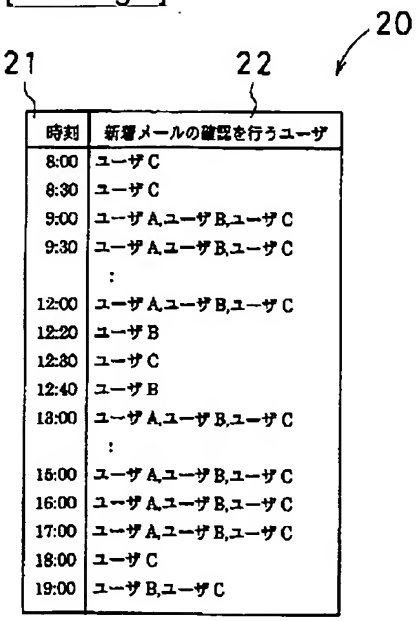
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

## DRAWINGS

[Drawing 1]

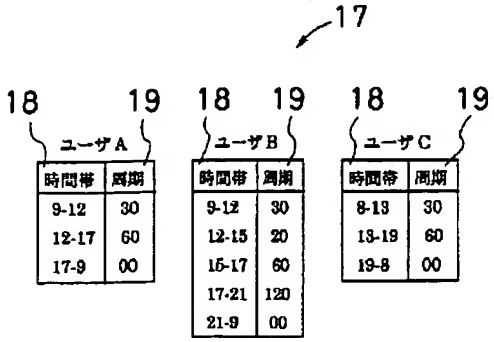



[Drawing 3]

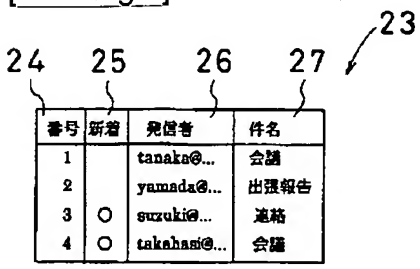



| 時刻 | 新着メールの確認を行うユーザ |
|---|---|
| 8:00 | ユーザC |
| 8:30 | ユーザC |
| 9:00 | ユーザA,ユーザB,ユーザC |
| 9:30 | ユーザA,ユーザB,ユーザC |
| | : |
| 12:00 | ユーザA,ユーザB,ユーザC |
| 12:20 | ユーザB |
| 12:30 | ユーザC |
| 12:40 | ユーザB |
| 13:00 | ユーザA,ユーザB,ユーザC |
| | : |
| 15:00 | ユーザA,ユーザB,ユーザC |
| 16:00 | ユーザA,ユーザB,ユーザC |
| 17:00 | ユーザA,ユーザB,ユーザC |
| 18:00 | ユーザC |
| 19:00 | ユーザB,ユーザC |

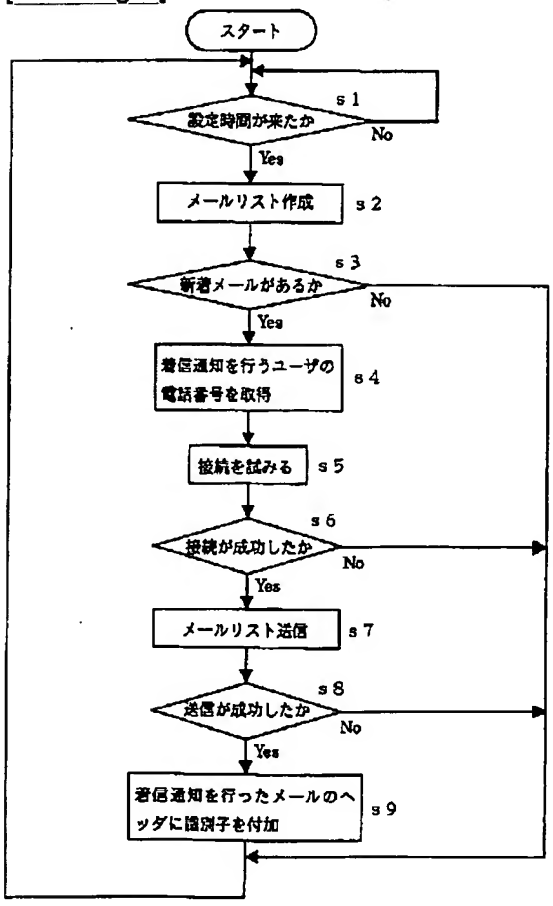
[Drawing 2]




[Drawing 4]




[Drawing 5]




[Translation done.]

## CORRECTION OR AMENDMENT

[Kind of official gazette]Printing of amendment by the regulation of 2 of Article 17 of Patent Law
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H04L 11/00 310 C
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[Filing date]August 23, Heisei 16 (2004.8.23)
[Amendment 1]
[Document to be Amended]Specification
[Item(s) to be Amended]Claim
[Method of Amendment]Change
[The contents of amendment]
[Claim(s)]

[Claim 1]
It is an electronic mail system is provided with a mail server connected by two or more communication apparatus, each communication apparatus, and communications networks which can transmit and receive an E-mail, and transmit and receive an E-mail between communication apparatus via a mail server,
Said mail server,
A mail administration preserving part which manages and saves received mail,
A mail confirming period management preserving part which manages and saves an inputted mail confirming period and creates a mail confirming period table from this mail confirming period,
It has the User Information preserving part which saves an address of a user's communication apparatus,
A mailing list is created according to an e-mail acknowledge request command outputted when it becomes the time based on said mail confirming period table, An electronic mail system transmitting a mailing list which acquired an address of a user's communication apparatus from said User Information preserving part, was sent, and was created, and performing an incoming call notice of arrived mail when arrived mail which has not performed an incoming call notice yet is in this mailing list.
[Claim 2]
A mail confirming period management preserving part of said mail server manages and saves an inputted mail confirming period for every user,
The User Information preserving part of said mail server saves an address of a communication apparatus for every user,